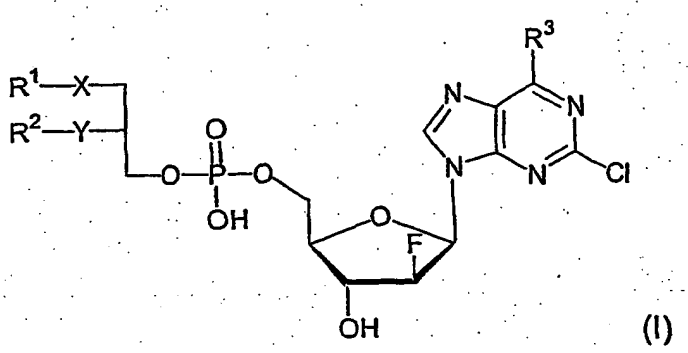
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A nucleotide derivative of formula 1



(I)

wherein

R^1 is selected from the group consisting of a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, which is unsubstituted or substituted at least once by halogen, C_1-C_6 alkoxy, C_1-C_6 alkylmercapto, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylsulfinyl or C_1-C_6 alkylsulfonyl groups;

R^2 is selected from the group consisting of hydrogen, a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, which is unsubstituted or substituted at least once by halogen, C_1-C_6 alkoxy, C1-C_6 alkylmercapto, C_1-C_6 alkoxycarbonyl or C_1-C_6 alkylsulfonyl groups;

R^3 is amino or OR^4, wherein R^4 is C_1-C_8 alkyl;

X is selected from the group consisting of a sulfur atom, a sulfinyl group and a sulfonyl group;

Y is oxygen;

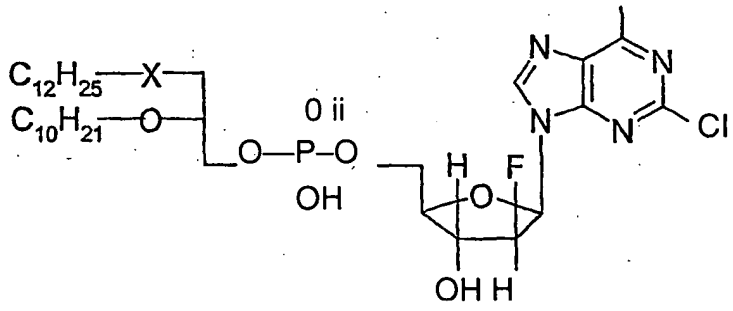
whereby when R^3 is amino, said amino group may be unsubstituted or substituted by a known amino protecting group,
their tautomers, their optically active forms and racemic mixtures, and their physiologically acceptable salts of inorganic and organic acids or bases.

2. (Original) The nucleotide derivative according to claim 1, wherein R^1 is a straight-chain C_8-C15 alkyl group, which is unsubstituted or substituted by a C_1-C_6 alkoxy or a C_1-C_6 alkylmercapto group.

3. (Original) The nucleotide derivative according to claim 1, wherein R^2 represents a straight-chain C8-C_{15} alkyl group, which is unsubstituted or substituted by a C_1-C_6 alkoxy or a C_1-C_6 alkylmercapto group.

4. (Currently Amended) The nucleotide derivative according to claims ~~1 to 3~~ 1, wherein R^3 is OCH_3.

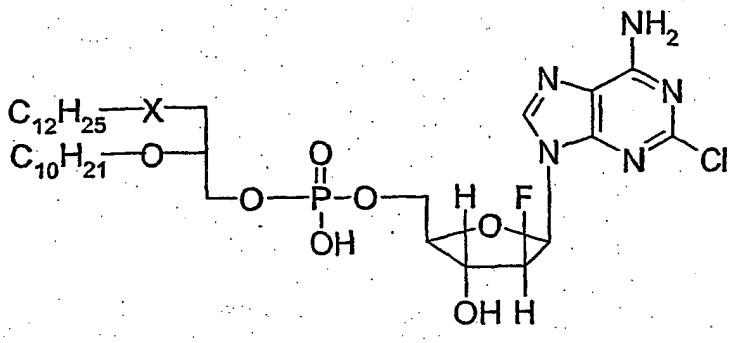
5. (Currently Amended) The nucleotide derivative according ~~the claims 1-4~~ to claim 1, wherein the compound is:



wherein X is sulfur, sulfinyl or sulfonyl.

6. (Currently Amended) The nucleotide derivative according to claims ~~1 to 3~~ 1, wherein R^3 is NH_2.

7. (Currently Amended) The nucleotide derivative according to claims ~~1 to 3 or 6~~ 1, wherein the compound is:



wherein X is sulfur, sulfinyl or sulfonyl.

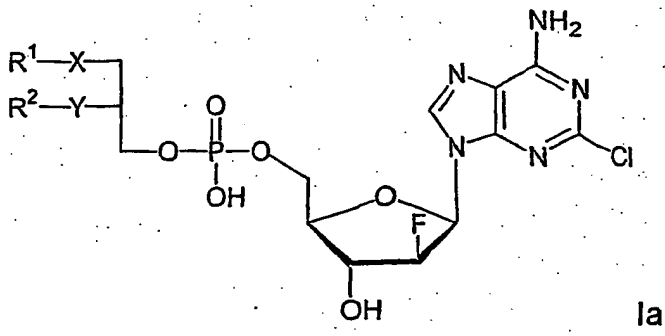
8. (Currently Amended) A pharmaceutical composition comprising at least one compound according to claims ~~1—7~~ 1 in combination with a pharmaceutically acceptable adjuvant or vehicle.

9. (Currently Amended) A method for treating malignant tumors comprising administering to a patient in need of such treatment an amount of a compound according to claims ~~1—7~~ 1 effective to treat said tumors.

10. (Original) The method according to claim 9, wherein said tumor is selected from the group consisting of carcinomas, sarcomas or leukemias.

11. (Original) A method for treating malignant tumors comprising administering to a patient in need of such treatment an amount of the composition according to claim 8 effective to treat said tumors in fixed or free combination with other anticancer agents.

12. (Original) A method of synthesis of compounds of the formula Ia:



Ia

wherein R^1 is is a straight-chain o r b ranched, saturated o r u nsaturated alkyl residue having 1-20 carbon atoms, optionally mono- or polysubstituted by halogen, C_1-C_6 alkoxy, Cl-C_6 alkylmercapto, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylsulfinyl or C_1-C_6 alkylsulfonyl groups;

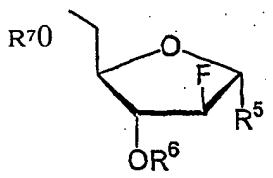
R^2 is hydrogen, a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, optionally mono- or polysubstituted by halogen, C $_1$-C_6 a ikoxy, C 1-C6 alkylmercapto, C $_1$-C_6 a lkoxycarbonyl o r C $_1$-C_6 alkylsulfonyl groups;

X is selected from the group consisting of a sulfur atom, a sulfinyl group and a sulfonyl group;

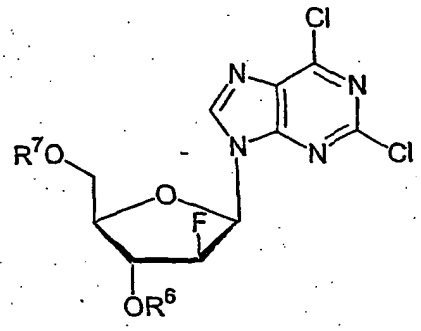
Y is oxygen;

comprising:

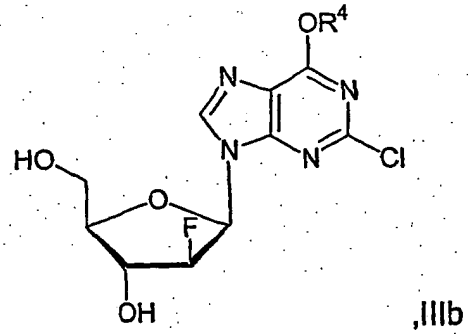
(a) reacting 2,6-dichioroadenine with an arabinofuranosyl derivative of the formula:



wherein R^5 is bromo or chioro and R^6 and R^7 are protecting groups, in the presence of a hindered potassium base and a solvent to form the dichioro-purine nucleoside derivative:

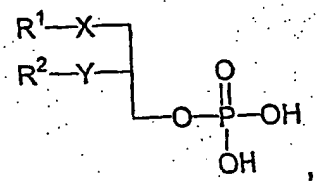


(b) subjecting said dichloro purine nucleoside derivative to conditions to provide for deprotection and an aromatic nucleophilic substitution reaction to provide the 6-alkoxy-2-chloro purine nucleoside derivative of general formula IIIb:

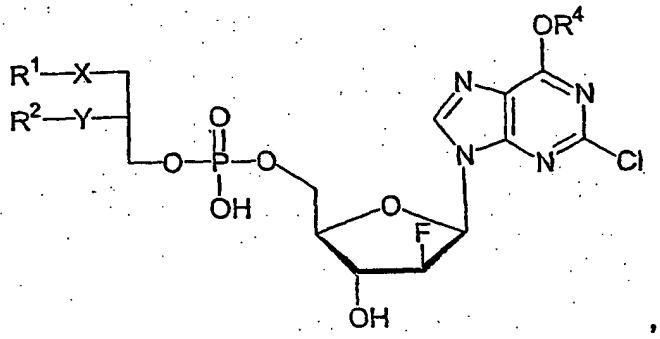


wherein R^4 is C_1-C_8 alkyl;

(c) reacting said 6-alkoxy-2-chioro purine nucleoside derivative with an activated form of the compound:

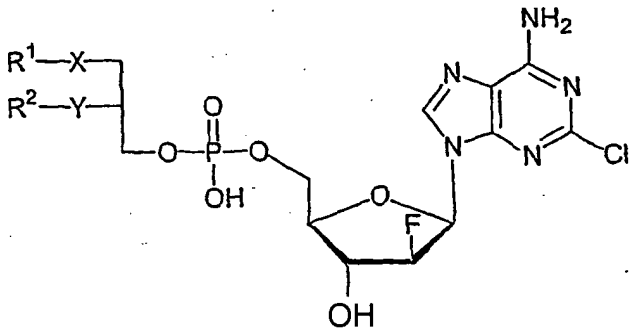


in an inert solvent to provide the conjugated 6-alkoxy-2-chloro purine nucleotide derivative of general formula Ib:



, Ib

(d) subjecting said conjugated 6-alkoxy-2-chloro purine nucleotide derivative to conditions that provide for aminolysis to prepare the conjugated 2-chioroadenine derivative:



13. (Original) The method of claim 12 wherein, said hindered potassium base is potassium t-butoxide or potassium f-amylate.

14. (Original) The method of claim 12, wherein said solvent for reacting said 2,6-dichloroadenine and said arabinofuranosyl derivative is a mixture of acetonitrile, f-butanol and 1,2-dichloroethane.

15. (Original) The method of claim 12, wherein R^4 is methyl.

16. (Original) The method of claim 12, wherein R^5 is bromo.

17. (Original) The method of claim 12, wherein R^6 and R^7 are independently acetyl or benzoyl.

18. (Original) The method of claim 12, wherein R^1 and R^2 are individually a straight-chain C_8-C_{15} alkyl group, which is unsubstituted or substituted by a C_1-C_6 alkoxy or a C_1-C_6 alkylmercapto group.

19. (Original) The method of claim 12, wherein R^1 is $C_{12}H_{25}$ and R^2 is $C_{10}H_{21}$.